WHAT IS CLAIMED IS:

1. A process for producing an image display device including a thin film semiconductor device comprising growing semiconductor crystal grains in a transverse direction in a semiconductor film by modulating a continuous wave laser into a pulsed laser beam and irradiating it on said semiconductor film.

2. A process for producing an image display device including a thin film semiconductor device according to claim 1, wherein the transverse direction is a parallel direction with respect to a main surface of a substrate on which the semiconductor film is formed.

3. A process for producing an image display device including a thin film semiconductor device according to claim 1, wherein said semiconductor film is an amorphous semiconductor film.

4. A process for producing an image display device including a thin film semiconductor device according to claim 1, wherein said semiconductor film is a polycrystalline semiconductor film.

5. A process for producing an image display device including a thin film semiconductor device according to claim 1, wherein an energy density of said pulsed laser beam is 200 mJ/cm^2 to 10 J/cm^2.

6. A process for producing an image display device including a thin film semiconductor device according to claim 1, wherein a pulse width of a pulsed laser beam is 100 ns to 1 ms.

7. A process for producing an image display device including a thin film semiconductor device according to claim 1, wherein a pulse width of a pulsed laser beam is 100 ns to 100 ms.

8. A process for producing an image display device including a thin film semiconductor device according to claim 1, wherein a pulse width of a laser beam, a time-dependent shape of laser beam intensity and an interval of laser beam pulses are modulated in modulating the continuous wave laser into the pulsed laser beam.

9. A process for producing an image display device including a thin film semiconductor device according to claim 1, wherein a raise time, a fall time, a pulse width and a pulse interval of a laser beam are controlled by polarization with an EO modulator according to an external voltage in modulating the continuous wave laser into the pulsed laser beam.

10. A process for producing an image display device including a thin film semiconductor device according to claim 1, further comprising a laser beam source of the continuous wave laser is a solid-state laser device or a laser diode device.

11. A process for producing an image display device including a thin film semiconductor device according to claim 1, further comprising detecting an alignment pattern on an insulating substrate on which the semiconductor film is formed and aligning a position between the insulating substrate and the laser beam.

12. A process for producing an image display device including a thin film semiconductor device according to claim 1, further comprising detecting an alignment pattern on an insulating substrate on which the semiconductor film is formed and aligning a position between the insulating substrate and the laser beam by an interferometer.

13. A process for producing an image display device including a thin film semiconductor device according to claim 1, further comprising relatively moving a relationship of a position between said pulsed laser beam and an object to be irradiated.

14. A process for producing an image display device including a thin film semiconductor device according to claim 1, wherein the semiconductor crystal grains are grown in a strip shape.

15. A process for producing an image display device including a thin film semiconductor device according to claim 1, wherein the thin film semiconductor device includes:

the semiconductor film whose semiconductor crystal grains are grown in the transverse direction,

a gate electrode formed on the semiconductor film through a gate insulating film,

first charge transmitting and receiving means and second charge transmitting and receiving means formed in the semiconductor film at a predetermined interval therebetween, and

a channel region formed in the semiconductor film between the first and second charge transmitting and receiving means.

16. A process for producing an image display device including a thin film semiconductor device according to claim 15, wherein a main orientation of the semiconductor film constituting the channel region is {110} with respect to a main surface of an insulating substrate or the gate insulating film.

17. A process for producing an image display device including a thin film semiconductor device according to claim 16, wherein a main orientation of a surface of the semiconductor film constituting the channel region substantially perpendicular to a direction for connecting the first and second charge transmitting and receiving means of the semiconductor film is {100}.

18. A process for producing an image display device including a thin film semiconductor device according to claim 15, wherein the semiconductor film is essentially comprised of crystal grains having an axis in a longitudinal direction of

45° or less with respect to a direction for connecting the first and second charge transmitting and receiving means in the channel region.

19. A process for producing an image display device including a thin film semiconductor device according to claim 15, wherein the semiconductor film is comprised of a small inclination grain boundary having an angle of 75° or less with respect to a direction for connecting the first and second charge transmitting and receiving means.

20. A process for producing an image display device including a thin film semiconductor device according to claim 15, wherein the channel region of the semiconductor film is comprised of crystal grains having a length dimension in a longitudinal direction for connecting the first charge transmitting and receiving means and the second charge transmitting and receiving means.